

REMARKS

Claims 1-16 and 18 are presented for consideration, with Claim 1 being independent.

Claim 1 has been amended to further distinguish Applicant's invention from the cited art. In addition, editorial changes have been made to selected claims. Claim 17 has been cancelled.

Initially, Applicant notes with appreciation that Claims 11, 12, 13/11, 13/12, 14 and 15 are indicated as containing patentable subject matter and will be allowed if placed in independent form. These claims remain in dependent form, however, as it is respectfully submitted that parent Claim 1 is patentable in its own right for the reasons discussed below.

Claims 1-18 stand rejected under 35 U.S.C. §112, first paragraph, as allegedly failing to comply with the written description requirement. In this regard, Claim 1 has been amended to delete the claim language objected to in paragraph 3 of the Office Action. Accordingly, reconsideration and withdrawal of the rejection under 35 U.S.C. §112, first paragraph, is respectfully requested.

Claims 17 and 18 were rejected under 35 U.S.C. §112, second paragraph, as allegedly being indefinite. In response to this rejection, Claim 17 has been cancelled and the language at issue in Claim 18 has been deleted. Accordingly, reconsideration and withdrawal of the rejection under 35 U.S.C. §112, second paragraph, is respectfully requested.

Claims 1, 2, 4-9, 16 and 17 stand rejected under 35 U.S.C. §103 as allegedly being obvious over Ophey '247 in view of Maeda '302. In addition, Claims 1-10 and 13/10 stand rejected under 35 U.S.C. §103 as allegedly being obvious over Maeda in view of Danziger '297. These rejections are respectfully traversed.

Claim 1 of Applicant's invention relates to a diffractive optical element comprising a periodic first blazed type grating portion and a periodic second blazed type grating portion which is arranged on a light exit side of the first blazed type grating portion. As amended, the first blazed type grating portion and the second blazed type grating portion are each formed by a plurality of grating sections, and a pair of grating sections corresponding to each other in each periodic first and second blazed type grating portions have the same period P_t . Also, each of the grating sections forming at least one of the first and second blazed type grating portions is formed by a sub-wavelength structure grating having a period p_l smaller than the period P_t . The period p_l is smaller than a wavelength of a light beam used.

Support for the claim amendments can be found, for example, in Figure 2, and the corresponding specification beginning on page 14, line 12. In accordance with Applicant's claimed invention, a highly effective diffractive optical element can be provided.

As discussed in the Amendment After Final Rejection of September 9, 2004, Ophey relates to an optical transmissive lens element 1 having a lens body 3 with an entrance surface 4 and an exit surface 5. The entrance surface has a grating 10 alternately comprising grating grooves 11 and intermediate grating strips 12. The exit surface is provided with grating grooves 16 and intermediate strips 17 arranged to be perpendicular to the grating 10.

The Maeda patent relates to an optical pick-up device that includes a diffractive optical element 7 with a first grating portion 7a and a second grating portion 7b (see Figure 3).

The secondary citation to Danziger relates to a multilevel diffractive optical element and was cited for its teaching of, with respect to Applicant's Claim 1, first and second blazed grating portions.

None of the cited art, however, teaches or suggests, among other features, first and second blazed type grating portions which are formed by a plurality of grating sections, wherein a pair of grating sections corresponding to each other in each periodic first and second blazed type grating portions have the same period P_t , and each of the grating sections being formed by a sub-wavelength structured grating having a period p_l smaller than the period P_t . These deficiencies exist in the gratings 10 and 15 in Ophey, as well as the first and second grating portions 7a, 7b in Maeda. The diffractive optical element in Danziger includes a base 10 having a succession of phase zones 1, but fails to compensate for the deficiencies in the primary citations.

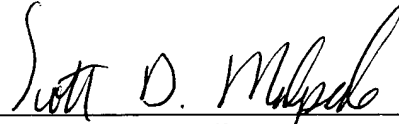
Accordingly, it is respectfully submitted that the patents to Ophey, Maeda and Danziger, whether taken individually or in combination with each other, fail to teach or suggest Applicant's claimed invention. Therefore, reconsideration and withdrawal of the rejections of the claims under 35 U.S.C. §103 are respectfully requested.

Accordingly, it is submitted that Applicant's invention as set forth in independent Claim 1 is patentable over the cited art. In addition, dependent Claims 2-16 and 18 set forth additional features of Applicant's invention. Independent consideration of the dependent claims is respectfully requested.

In view of the foregoing, reconsideration and allowance of this application is deemed to be in order and such action is respectfully requested.

Applicant's undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,

A handwritten signature in dark ink, reading "Scott D. Malpede", written over a horizontal line.

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